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FOUNDED BY WILLIAM HUNTING, F.R.C.V.S.

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THE N.V.M.A. MEETING.

The important meeting of "The National" fixed for last Wednesday has been postponed. The executive officers deferred the decision as long as possible; but on Sunday it was felt that a successful meeting had become out of the question, so postponement was resolved upon. One can only hope that the next date chosen may fall in more favourable conditions. Our little profession is peculiarly unlucky in the coincidence of great public disturbances with its principal events. We all remember how the outbreak of the European war ruined the first International Veterinary Congress held in England. Last week, a post-war industrial convulsion stopped the most important veterinary gathering planned in this country since 1914.

A NEW METHOD OF CASTRATION.

The Spanish paper on Castration, a summary of which appeared a fortnight ago, deserves some attention. It proposes an operative procedure which is simpler, more surgical, and undeniably safer for the animal than the usual methods, and which is also supported by a physiological argument. Physiologically, the idea of destroying the spermatic secretion of the testes and at the same time preserving the internal secretion seems very plausible. Whether this operation really does so effectively without any counter-balancing disadvantage is another question, which its Spanish advocate does not claim to have settled. He tells us, rather vaguely, that the results of the operation have, so far, varied with the age at which it has been performed, but does not indicate the nature of the variations. He proposes to test the operation; but the question will require a great many observations, some of which might well come from other sources. There may be a few British members who have opportunities for observing the operation, or possess information regarding it; if so, they have here a chance of useful reports.

Castration as now performed has serious evil effects. The loss from fatalities directly arising from it, in the aggregate, is far from negligible. Its effect in "diminishing the resistance of the organism" is much less demonstrable, but is probably none the less real. Its effect upon the working power of the horse is indisputable; and, though the economic loss from this cannot be estimated, its total must be considerable. Any operative procedure offering the hope of lessening or removing all these disadvantages deserves a thorough test.

POISONING BY EQUISETUM (MARE'S TAIL).

By W. R. DAVIS, M.R.C.V.S., Enfield.

Among cows, one meets with from time to time, especially in marshy districts, cases presenting the following symptoms. The patient reels and staggers like a drunken man. If the recumbent position is assumed there is disinclination or inability to rise for a time. When the animal gets up it may walk in an extraordinary manner — flexing all the members violently, so that its progression is most grotesque. The fore limbs are snatched up with an exaggerated hackney-like action, the hind limbs are moved as if the cow had very bad stringhalt. At times the slightest sound will make the patient start as if in terror. In a case I had last week there was considerable tympany which, however, yielded to a couple of carminative doses. Usually the appetite is preserved, though there is a falling off in the quantity of milk. The affection may last for some days. I have not seen a fatal case.

The cause of the trouble is the ingestion of Equisetum, taken in the pasture or as hay. A bull on the farm where my case of last week occurred is, I believe, suffering from a chronic form of the malady. He has been fed on hay which contains a large percentage of mare's tail. The bull moves about his box exactly like a cow in the first stage of drop.

It is stated in Fröhner's Toxicology that horses and sheep are also affected, but I have only seen the disease in bovines. According to Fröhner, there is found post-mortem hyperæmia of, and serous exudation into, the coverings of the cord and cerebellum.

As to treatment, there should be an immediate change of fodder and the administration of an aperient (aloes, oil, or treacle). Strychnia, Ammon. carb., Ether, Camphor, may be afterwards prescribed if necessary. The poisonous principle in Equisetum is not well known. According to Lohmann it is due to an alkaloid, Equisetin, while other authorities maintain that the poisoning is indirect, and, as supposed in the case of Lupinosis, is due to fungi found on the equisetum.

CONFERENCE OF VETERINARY INSPECTORS HELD IN THE UNIVERSITY OF DURHAM COLLEGE OF MEDICINE, NEWCASTLE-ON-TYNE, ON FRIDAY, AUGUST 1ST.

EQUINE PARASITIC MANGE

By ARTHUR GOFTON, F.R.C.V.S., Edinburgh.

The discussion opened by Prof. WOOLDRIDGE, Royal Veterinary College, London.

Of the four varieties of parasitic mange which affect the horse, Sarcoptic and Psoroptic mange have an economic importance which greatly exceeds that attaching to the chorioptic (symbiotic) and demodectic forms,

The rapidity and certainty with which they spread, if uncontrolled, together with the loss of utility and the prejudicial effect on the general health and nutrition of the affected animals, place these diseases in a category which demands the application of measures directed to secure a limitation of their incidence. Both forms are notifiable under the Contagious Diseases (Animals) Acts; and the Parasitic Mange Orders of 1911 and 1918 have been framed for their control.

Chorioptic mange, commonly referred to as "leg mange," is not scheduled, and popularly it is regarded as of such minor significance that many horse owners ignore its presence. Its spread is admittedly slow, especially under good stable management, and its existence rarely becomes so glaringly obvious as in the sarcoptic or psoroptic forms, but a policy of neglect is decidedly unsound. The animals suffer from diminished rest, they are frequently the subjects of self-inflicted injury from kicking and scratching, they are troublesome, often dangerous, to shoe, and thus entail waste of time and labour.

A variety of the Demodex folliculorum has been proved, during the period of the war, to be relatively a much more common parasite of the skin of the horse than had been previously thought. There is, however, room for difference of opinion as to the clinical and pathological significance which should be attached to its presence. Lesions of the skin have been described in which without doubt the parasites were present, but it has still to be proved that etiological responsibility for the lesions can rightly be attached to the demodex. Animals have been under my personal observation for two or three months, during which time the parasites could be readily demonstrated, without showing the smallest detectable lesion or loss of hair. The parasite is also said to cause pruritus, and undoubtedly pruritus was responsible for at least the majority of the examinations which led to its demonstration, but it has still to be shown that the parasite does not occur with equal frequency on the skins of non-itchy horses. Further, it may be noted that pruritus is not a symptom of its presence in man or in the dog, in both of which it is held responsible for definite and well defined lesions. The information at present available indicates that demodectic mange of the horse is not transmissible. Experimental attempts to transplant the parasites on to the skin of non-affected horses have failed, and the hosts of the parasites may remain in contact for months with other animals under conditions which provide every facility for transmission, without the contacts showing evidence of infection, or the demodex being demonstrable in scrapings taken from their skins. The existence of a disease in the horse which could fairly be described as demodectic mange is thus problematical, and until more precise information is forthcoming it must remain an open question whether the demodex has either clinical or pathological significance in that animal.

As a preliminary step in considering this subject it is of interest to ascertain the relative frequency of the different types of equine mange. Unfortunately the Board of Agriculture returns do not differentiate beween the two notifiable forms. Pillers (1) estimated that about 5% of the reported cases of mange were sarcoptic and 95% psoroptic. These figures may be approximately correct, but one can scarcely believe that the incidence of the two varieties in civil stables should be in almost exactly reverse proportions to that which was found to obtain in the British Armies in the field. Wadley, (2) quoting Pallin, states the following results were obtained from a large number of scrapings taken from itchy horses in the B.E.F. in France

Sarcoptic mange	p/c 46·15	Forage acari	p/c 14·72
Psoroptic mange	4·57	Lice	1·71
Symbiotic mange	·83	Ringworm	1·81
Demodex	4·52	Negative	24·71

These figures give approximately the following percentage occurrence of the different varieties of mange—sarcoptic 81, psoroptic 8·5, demodectic 8·5, chorioptic 2. and they are in keeping with the writer's experience under military conditions. There can be no doubt, however, that in commercial stables, at all events, 2% does not represent the true proportion of chorioptic mange. It is probably the most prevalent form, but as already stated its presence is commonly ignored.

A knowledge of the life cycle of the parasite and of its viability away from the living host is of material importance in devising measures of control. Observations agree almost universally that the average time occupied in passing through the various phases—egg, larva, nymph, adult, ovigerous female—is about three or four weeks. It is quite certain, however, that various factors, of which our knowledge is very limited, may come into play under natural conditions, and, by influencing the reproductive activity, and possibly also the duration of life of the parasites, add to the difficulties of control and eradication. Horses commonly develop symptoms of mange months after they have been removed from the risks of infection, and it is well known that the disease may re-appear in a horse which has been free of all symptoms for several months Admittedly it is impossible to exclude chance infection absolutely in animals not under conditions of rigid control, but delayed appearance of symptoms and recurrences have both been observed so frequently under conditions in which the risk of chance contagion is remote, that the explanation must be sought elsewhere. One cannot free one's mind from the probability that the parasites may be resident on the skin of an animal in a latent or quiescent form in which the rate of multiplication may fall greatly below the average, with, as a consequence, localisation and/or the absence of manifest evidence of their presence. Gerlach's (3) statement that the average produce of a single fecundated female is fifteen eggs, and that her progeny in a period of ninety days may number one-and-a-half millions, is generally accepted as a working basis in estimating the rate of reproduction, and from this it is generally held that even a moderately heavy infection will actually result in the manifestation of clinical symptoms within a month or six weeks, but, as already stated, considerably longer periods may elapse between infection and the appearance of clinical symptoms. The observations of Stockman and Berry (4) on the psoropt of sheep scab are of value as indicating variations in the rate of reproduction which may occur in these parasites. They state that while the average produce of eggs per female is probably fifteen, the number may be as low as two or three, or it may be as high as thirty in particular females. It seems quite probable that similar variations are to be observed in the closely related parasites of the horse, and it is not difficult to conceive that natural conditions, as they operate favourably or unfavourably on the parasite, may result in material variations in the rate of reproduction.

The seasonal incidence of mange appears to lend a measure of support to this view. The following figures extracted from the Board of Agriculture returns, as reprinted weekly in *The Veterinary Record*, show the average number of outbreaks reported by the Local

(1) Pillers—Hoare's System of Vet. Med. Vol. II.
(2) Wadley—Vet. Journal, Vol. 74.—May, 1918.
(3) Gerlach—Neumann's Parasites and Par. Dis. of Dom. Animals, Macqueen's transl.
(4) Stockman and Berry—Journ. Comp. Path. and Therapeut. Vol. 26.

Authorities month by month for the last four years. (Figures for 1919 are stated to be approximate only).

For year ending May	*1916*	*1917*	*1918*	*1919*
June	23	29	39	85
July	26	29	38	58
August	12	20	27	45
September	13	17	21	30
October	14	15	20	33
November	17	22	44	60
December	39	44	89	108
January	97	83	153	178
February	84	87	168	168
March	55	68	116	134
April	40	45	93	119
May	41	44	86	94

The returns are lowest in August, September and October, the December outbreaks are double those of November, and in January and February they are double those of December. The decline begins in March and continues steadily until the minimum is reached. This incidence is identical with that observed in the Army under active service conditions.

The long winter coat and consequent accumulations of secretions and dirt on the skin may be suggested as an explanation of this seasonable incidence, but a moment's reflection reminds one that clipping must largely counteract any advantage derived by the parasites from the long coat, also that the disease occurs indiscriminately in the clipped and in the unclipped. It is true that in clipped animals, whether rugged or not and whether stabled or not, the coat grows more rapidly and thickly during the period of greater incidence, and cleanliness of the skin is much more difficult to secure. On the other hand, in an affected animal living out in the open, especially under winter conditions and ungroomed, the disease is frequently observed, particularly in its earlier stages, to make little or no progress, but immediately shelter, even of the most rudimentary description is provided, the rate of progression generally increases notwithstanding regular grooming and diminished uncleanliness of the skin. No doubt the shelter and association with other animals is productive of a measure of warmth, but warmth alone does not appear sufficient to account for the more rapid progress. As further emphasising this point, Berton (5) and Dieudonné(6) record spontaneous cures of mange in horses showing pronounced clinical symptoms by simply turning them into a field for couple of months and leaving them there without shelter or attention other than feeding. The only conclusion which one can draw from these observed facts is that long hair and accumulations of secretions and dirt on the skin are not, in themselves, such important factors as they are generally considered to be. If they operate favourably to the parasite, it is only in association with other factors.

Spontaneous disappearance of all clinical evidence of mange has been a matter of common observation. Probably it occurs at all periods of the year, but my own experience of apparent spontaneous recovery is confined to September and October, coincident with the shedding of the summer coat. These months show the minimum incidence of mange. A sharp decline in the mange rate takes place in March and April; that is to say, also during the period when change of coat is likely to be occurring. Do modifications in the functions and secretions of the skin occur at these times which react unfavourably on the parasites? A point of practical importance which has still to be determined is, in what proportion of the animals which apparently recover spontaneously, do the parasites die out?

(5) Berton—Rec. Gen. de Med. Vet. Vol. 25, Nov., 1916.
(6) Dieudonné—Rec. de Met. Vet. Vol. 94 15th July, 1918.

Henry's (7) article on psoroptic otocariasis in horses is of interest as indicating the possibility of continued residence of mange parasites on the body of the horse, accompanied by symptoms so slightly obvious as to make the probability of recognition remote. Having observed that the psoropt was present in the ears of 71% of the horses examined in a veterinary hospital, the majority of which were affected with mange, though mainly sarcoptic mange, he extended his observations to a unit in which mange was rare, and found the same parasite present but unsuspected in the external ears of 42% of the horses.

The viability of the parasites away from the body of the living host is of importance in considering measures of control. This is fairly well known. Few of the parasites are capable of living for periods longer than two or three weeks, and though they have been observed to live as long as one month, it is doubtful if they exceed that time. Allowing a margin of safety, six weeks may fairly be regarded as the maximum duration of life away from the living host.

Methods of Spread.

The contact of affected with healthy animals is the most obvious method of spread, and in particular the horse which, while clinically affected, shows no loss of hair or other obvious symptom, is a material source of danger because he is usually unsuspected by his attendants. Probably the indirect method of infection occurs with a frequency at least equal to direct contagion. Grooming tools common to several horses; the interchange of clothing, harness and equipment of every description; stabling in public premises, etc., offer abundant opportunities for transplanting the parasites from affected to healthy skins. Shoeing forges offer facilities for both direct and indirect contagion. Attendants by means of their clothing and their persons are not negligible factors. The inner face of the thigh is one of the most common sites of sarcoptic mange, and the ease with which the farrier may carry infection on his clothing from one horse to the next needs no demonstration.

Conditions which bring together large numbers of horses, as in war, with frequent movements, constant changing of stabling or standings, and much transport by rail and ship, are invariably accompanied by the appearance and spread of mange. The late war was no exception in this respect, and in its early days it quickly became manifest that the mange problem required concentrated effort, if the disease was to be kept within reasonable and controllable limits and was not to be permitted to become a hindrance to mobility. Experience led to the improvement of the means available for control, and I venture to say that the percentage incidence of mange in the later period of the war, if published, will show a distinct reduction as compared with the experience of earlier days.

Diagnosis.

Early diagnosis is essential to efficient control, and in practice no animal should reach the stage of depilation and desquamation before a diagnosis is made. Under civil conditions, the inexperience of owners and attendants is responsible for the majority of cases reaching a fairly advanced stage before action is taken, but a minimum of instructions should help to remove the risk of this mistake being repeated. Every itchy animal should be held suspect, especially in studs in which mange is known to have appeared, until the presence or the absence of the parasite has been determined. Pruritus alone is not evidence of infection whether or not accompanied by the most manifest evidences of pleasure and a lip reflex. In Pallin's figures already quoted, 42% of

(7) Henry—Rec. de Med. Vet. Vol. 93, Jan. 4th, 1917.

scrapings from itchy horses proved mange negative. On the other hand, a single negative result is not conclusive. A second, third or fourth scraping may be necessary before the parasite can be demonstrated. The method of taking a scraping materially increases or decreases the prospects of demonstrating the parasite. The inclusion of masses of scales and hair will result in a failure to diagnose a considerable percentage of cases, especially in their early stages.

In practice, the following procedure will be found as simple and convenient as any other. A spot should be chosen where pruritus is most manifest, any hair present should be clipped with scissors as close to the skin as possible, rough scales should be removed with petrol, ether, or liquor potassæ, and the scraping taken. The burrowing habits of the sarcopt make it necessary to extend the scraping to the deeper layers of the skin, and this should be done in all cases, since a double infection with the sarcopt and the psoropt is far from uncommon. The scraping should be placed direct into a 10% solution of caustic potash, boiled for five minutes, centrifuged, and the deposit examined with a low power lens. By this means the scales are broken into small fragments and the parasites or their eggs can be readily seen. A drop of glycerin added to the deposit before examination helps to clarify the field and is a distinct advantage.

A discussion of the clinical symptoms of mange is uncalled for, but reference may be made to the earliest clinical manifestations and to the localisation of the different forms. Before the hair falls or scabs appear, minute nodules may be felt under the hair on the surface of the skin. When combined with pruritus such nodules should always lead to a precautionary isolation of the animals, even if scrapings prove negative. For preference, the sarcopt chooses the withers, the throat or the intermaxillary space. In the two latter positions, pruritus is often much less manifest. The inner face of the thigh between the hock and the stifle is a very common site, often overlooked, and to which it frequently remains confined and unsuspected for considerable periods, spreading later to the under surface of the belly and flank.

The psoropt prefers the mid-dorsal line of the body and the root of the tail. Not uncommonly it is wholly confined to the tail which may be infected throughout its length. Whilst these constitute the chief points of selection, no part of the body is immune from attack and whatever the starting point, more or less wide extension follows with varying degrees of rapidity.

The chorioptic form, though mainly attacking the legs below the hocks, is not confined to these regions. It may, though infrequently, spread more or less generally over the surface of the body.

Control. Treatment.

Legislation for the control of mange is provided for by the Parasitic Mange Orders of 1911 and 1918. These orders are applicable to sarcoptic and psoroptic mange only. Briefly, they provide for notification; for detention and treatment of affected animals with permission to work under license granted by an inspector of the Local Authority, and with safeguards against the risk of spreading the disease; for the efficient application of an approved remedy for parasitic mange to the skins of incontact animals, which must be applied within the seven days preceding movement from infected premises; and for cleansing and disinfection. The orders differentiate, so far as freedom of movement under license is concerned, between the horse which is certified to be suffering from psoroptic mange only and the animal which is not so certified, and therefore presumably suffering from sarcoptic mange or a double infection. In the former case the animal may apparently be moved anywhere to and from the infected premises for the purpose of work, provided it has been dressed within the preceding seven days with an approved remedy for parasitic mange, and is not absent for a period exceeding twenty-four hours. In the latter case movement for the purpose of work is only permissible to and from premises in the occupation of the owner within the same time limit, and provided an approved remedy has been applied immediately before the movement. The reasons which have led to this differentiation are not obvious.

A single dressing is insufficient protection to an incontact animal. Contact of the dressing with the skin is essential, and without clipping this cannot always be ensured especially in winter time. A dressing with a soap base which can be used as a wash has distinct advantages; it is generally more satisfactorily applied, the soap makes the preparation more permeable, and it cleanses the skin, removing scales and dirt which afford shelter to the parasites. In conjunction with clipping such a dressing used once a week for five or six weeks will negative the risks of extension of the disease. Obviously it must be conjoined with appropriate disinfection, and separation from infected animals, for nothing short of continuously soaking the skin with mange dressing will afford protection against constant exposure to the risks of contagion. In dealing with large numbers of animals where individual attention and hand dressing are less possible, dipping permits of preventive and curative treatment on a scale which could not otherwise be undertaken. The dips as used by the British Armies in France were built of cement and were constructed on the same principle as a sheep or cattle dipping tank. Five or six hundred animals can be passed through one dip easily in a single day within the ordinary working hours. Solutions of calcium sulphide or arsenic were used in the dips, at a temperature which was maintained as near 105° F. as possible. The former proved the more efficient preparation. Solutions of arsenic, to be effective, require a concentration which is not without risk of causing symptoms of poisoning amongst the animals treated. In the base hospitals in France, all animals which were sufficiently fit were regularly dipped as a prophylactic measure, and the benefits derived were very obvious to those who had experience of the hospitals before and after regular dipping was instituted.

The French strongly advocated vapour baths of sulphurous anhydride gas for prophylactic and curative purposes. The animals were subjected to this treatment in specially constructed chambers. Their heads projected from the chambers and the escape of gas was prevented by means of a collarette which fitted closely round the neck. The best results were claimed for exposures of from one-half to two hours in a concentration of three to five per cent of sulphurous anhydride at a temperature of 30°C., the heads being subsequently hand dressed with a mange dressing. Cures were claimed after one or two exposures; but in British hands this treatment proved less efficient than dipping, and never came into extensive use.

It is not proposed to discuss the value of the various remedies which may be employed in the treatment of mange; whatever the remedy chosen, its application must be thorough and should extend to the whole body. Chorioptic mange localised in the legs may be regarded as an exception to this statement, but it must not be forgotten that chorioptic mange may and sometimes does extend to the body. Dressings should therefore be applied with a considerable margin beyond the detectably affected areas. The skin must not be permitted to become clogged with scales, dirt, or old dressings. Grooming is of value in sarcoptic mange, by opening galleries in which the female sarcopt lives and exposing them to the action of the dressing.

It is generally held that psoroptic mange is more easily cured than sarcoptic. As a general principle this is probably true, but it is far from being always the case. Psoroptic mange can be very resistant to treatment, and may continue indefinitely, especially if crusts and scales are allowed to accumulate on the skin and provide shelter for the parasites.

It is difficult to determine the time when one can feel assured that recovery has been effected—if by the term recovery is meant freedom from the parasites of mange. This statement may be questioned, but it is true. Recurrences in animals after the disappearance of clinical symptoms are well known, and there is little room for doubt that the parasites may remain more or less quiescent on the skin for considerable periods of time. It is a sound precaution, therefore, to keep recovered animals under close observation for a period of three months, and to adopt a policy of working isolation during that time. The affected animals must be separated from the healthy. The more complete the separation the less the risk of indirect contagion, and for this reason separate attendants are desirable. Working or regular exercise appear to operate favourably to recovery, and it is clearly advisible that they should be carried out under conditions which remove the risk of communicating the disease to other horses.

Disinfection must be systematically carried out along with other measures of control. Every place or thing used about or for the infected animal must be subjected to similar treatment. The procedure for disinfection and the materials to be used for the purpose are laid down in the Parasitic Mange Orders. It is important that grooming tools, clothing, harness leather work and fittings, should be freed from adhering grease and dirt as a preliminary to efficient disinfection. Clipping machines should not be overlooked, and since the clothing of grooms and clippers, as well as of shoeing smiths, afford opportunities for transplanting the parasites from the affected to the healthy, they should be appropriately treated. The standings and equipment of affected animals under treatment should be periodically disinfected as progress is made towards recovery.

Discussion.

Prof. Wooldridge considered that Mr. Gofton had submitted a most excellent paper, and furnished ample material for useful discussion. He agreed with Mr. Gofton that far too little was definitely known concerning demodectic mange in horses. It was a matter for comment that it was usually the squamous form that was met with, and not the pustular form so common in young dogs; and moreover the lesions were generally confined to the eyelids and nose.

He was not at all satisfied that the parasite was so commonly found in sound skin as had been suggested. He considered that Pillers' statement—that sarcoptic mange occurred only in 5% of cases, was far too low; and he similarly considered that Pallin's figure for psoroptic mange (4.572) in army horses was far lower than its occurrence in civilian stables. He had not kept statistics of his own cases, but his impression was that these two forms were about equally prevalent and were not infrequently co-existent. It was a very interesting fact that Psoroptes had frequently been discovered about the poll and ears without giving rise to any symptoms.

He did not agree with the figures quoted concerning the number of eggs deposited by Psoroptes. In the case of Sarcoptes they were between 15-30, but in Psoroptes they were 80-100. It was a matter to note that the mange parasites only lived six weeks as a maximum away from a host; but what of the eggs? He thought it likely that under favourable conditions of temperature the eggs might retain full vitality much longer. Probably the most interesting item of the paper was the table showing the seasonal incidence—the cases being so much more numerous from December to April. This might be due to housing and warmth and the overcrowding, and he considered that any material alterations in the secretions were improbable. This was a problem well worthy of careful investigation.

The transmissibility of mange was of great importance; but he considered that the blame attached to shoeing-smiths was over-estimated, except so far as referred to Symbiotic mange and itchy legs. Although Sarcoptic mange occurred inside the thighs, shoeing-smiths did not usually come into contact with that part, and therefore were most unlikely to spread it.

The transmissibility of equine Sarcoptic mange to other species of animals and to man was of importance in any system of control, and of assistance frequently in diagnosis, since grooms attending such animals were often affected on their arms and breasts. Psoroptic mange on the other hand was not transmissible to other species. He was glad to hear that Mr. Gofton did not accept the "lip reflex" as diagnostic of mange, although every itchy animal should be held suspect. It was little short of a disgrace that some inspectors, even at the present time, regarded the "lip reflex" as a diagnostic symptom of mange. It was simply an evidence of gratification at being scratched and would occur in any irritating condition, such as mange, lice, ring-worm, etc.

Treatment must be included in a discussion in the control of mange. He considered the old oil and sulphur dressings to be the most effective, and the best basis was clarified horse fat, prepared by boiling knacker's horse fat for an hour in several times its bulk of water, as suggested by Mr. Boyer and others. The next most important thing was thoroughness of application. The dressings should be applied every four days—the time required for hatching eggs. Four such dressings should completely cure Psoroptic mange, but treatment should extend over six weeks for Sarcoptic mange.

He was astonished to hear Prof. Gofton say that he got arsenical poisoning by absorption of dressings from the skin, and he would take leave to express doubt as to the channel of entrance of the arsenic, for he believed that arsenic was not absorbed through sound or unabraded skin. He agreed that it was a wise precaution to isolate for three months where possible, to avoid general spread in case of relapses.

Mr. Wm. Templeton, Torland, Dalserf, Lanarkshire: He saw from last annual returns, cases in Lanarkshire were more numerous than in any other county in Scotland. That of course was not a reflection on, but a compliment to the Veterinary Inspector, Mr. Begg, it was a proof that all cases were reported and dealt with. In prosecution cases many defaulters plead ignorance of the existence of mange, and he (Mr. Templeton) sympathised with respectable farmers who were heavily fined for such an offence. Mange, however, must inflict much suffering, and being very contagious must be strictly dealt with. He might ask the profession, however, if it could not be possible to have some kind of chemical solution, wash, or disinfectant which would combat the disease, and could be used periodically or whenever symptoms appeared. What about paraffin? He knew that was used as a disinfectant and also that it prevented baldness, and had proof of that by having used it successfully some years ago when his hair began to fall out. (A voice—Perhaps there has been worse than paraffin oil on your head! Amid much laughter the speaker admitted there had been worse than paraffin on his head, and in it.)

Mr. Thomas Parker, F.R.C.V.S., Veterinary Officer, Newcastle-upon-Tyne: Concerning the treatment of Equine scabies, perhaps the most important points may be expressed in one word, namely, thoroughness. Many

and varied were the applications used, but in all cases it was essential to pay attention to detail. Particularly regarding the Sarcoptic variety, it was little better than useless to partly dress the animal only. Dressing from head to foot thoroughly and at intervals with mathematical precision was necessary to ensure success. In reference to recurrent outbreaks in stables inhabited by mice, was it not possible for these mammals to become infected for the time being (although the wrong hosts for the equine sarcopt) and thus act as carriers not only within the same stable but also to carry the disease to adjoining premises? In one of the outbreaks which occurred within the city in which 8 horses out of 10 were found diseased on the same premises, a mouse was found in a mangy condition. Scrapings revealed a sarcopt indistinguishable in every particular from that of the Equine sarcopt. And on the same premises the groom was found affected with the disease on both forearms. I have seen men attacked similarly in two other instances, and in each the horses were suffering from the sarcoptic variety of the disease.

Mr. G. P. MALE, Reading, congratulated the essayist on the very interesting facts and observations related in his paper.

With regard to the Parasitic Mange Order, he thought it should be recognised that this was a war measure, and that owners were allowed to work their horses under license owing to the shortage of horses at that time, and that the work of the country would have been much dislocated otherwise. The Order however said nothing about withdrawing the license, and he related the case of a large firm of bakers with 30 to 40 horses which had been affected with mange for some time and which were undoubtedly spreading the disease. If they were shut up the bread could not be delivered, and he doubted if the license could be withdrawn so long as they carried out the Order.

As to diagnosis, the method described was a very good laboratory one, but in practice he found it more convenient to just soak the scrapings in 10% pot. hydrate for from 1 to 24 hours, and examine them between two slides. A quick method also was to put them on a warm glass and examine with a hand lens, or to place them on the back of one's hand. When in the case of the psoropt the movements could be seen. He emphasised the importance of working under the tail and in the folds of the vulva and sheath. In some recurrent cases he had found a little nest of parasites in these regions.

He thought the seasonable occurrence of mange as pointed out by Prof. Gofton may perhaps be accounted for by the condition of the skin at certain seasons of the year. In the spring and summer almost any dressing could be used with impunity, but in the winter even plain oil or washing with soap would blister the skin. This might also account for the different treatments adopted and discarded by the Army authorities. What would cure at certain seasons was not effective at others. Most people had to fall back on oil and sulphur, and he thought that if properly refined, as suggested by Prof. Wooldridge, there was nothing better than horse oil.

Soda baths he had also found very effective in chronic cases where the skin was dry and scurfy.

He agreed with the essayist as to the spread of sarcoptic mange by means of the blacksmith in those cases where the inside of the legs were affected.

Prof. GAIGER said that he wished to thank Mr. Gofton very much for his extremely interesting paper. One of the many interesting things which the paper contained was the table, also shewn upon the blackboard. The facts revealed in this table—that mange is always more prevalent with the advent of the colder months of the year, ought to be explained in some way. To his way of thinking the explanation might be that the parasite of mange is the same as all other forms of life of this kind in that for the colder season more food and more warmth are required. During the warm season the mange parasite finds enough nourishment on the surface of certain regions of the body without penetration, but in cold weather the acarus penetrates the surface and sets up clinical symptoms. It is with the mange parasite as it is with all other parasites, that everything depends upon the habits and life-history: it is only from a thorough understanding of these that we can devise preventive and curative measures. Are we to look upon the mange acarus as a permanent parasite or only as an occasional parasite? Occasional in the sense that it is only at certain seasons of the year that the acarus actually lives at the expense of the host, whereas at other seasons it may live in certain situations on the host though without doing any injury.

It would seem as though this fact suggested a possible improvement in our methods of treatment, in that we should treat animals before clinical symptoms manifest themselves, and not wait for the acarus to penetrate the skin, in cases where outbreaks are of annual occurence, during the cold season.

He expressed a little surprise that Mr. Gofton should think that enough arsenic could be absorbed through the skin to set up poisoning, when arsenic dips are used. He knew of experiments which had been made in West Africa to try and cure trypanosomiasis by dipping in strong arsenical dips, the idea being to get enough arsenic absorbed through the skin to kill off all the trypanosomes in the body. These experiments were a failure because the amount of arsenic absorbed was quite insufficient to affect the numbers of trypanosomes in the body.

Different opinions had been expressed as to the numbers of eggs which one female mange parasite might lay; some say 10 or 15, others suggest 100. It must be a very difficult thing to estimate, because of the difficulty of selecting a good sample of the female acarus for the purpose. In the case of ticks, it is easy enough to select a good sample of female tick and to notice that she, when replete with blood, and after impregnation, will lay up to 5000 eggs, and that without another feed. But who will say that the same applies to the female acarus whose egg is so large in proportion to its body? Can one keep the female acarus in captivity for observation under conditions appertaining to nature? It seems probable that in nature the female acarus might lay the larger of the two numbers of eggs accredited to her.

Emphasis ought to be laid upon the necessity of the utmost care being given to microscopic examination for the purpose of diagnosis. Inability to find the parasite ought not lightly to be taken as warranting a negative diagnosis.

Perhaps more attention might be drawn to the possibility of some outbreaks being not due to the ordinary mange parasite, but to the so-called forage acari. One case was mentioned by Pillers in *The Veterinary Record* recently. He (Prof. Gaiger) had recently had samples of scrapings from the skin in an outbreak in cattle. As the cases were upon a remote island off the coast of Scotland, he had not seen them. Examination of the most searching kind over the greater part of several days had not revealed any mange parasites, but in every slide there were several "forage acari," and he was inclined to think they were the cause of the trouble. The skin trouble was only mild.

Mr. E. LYNE DIXSON, M.R.C.V.S., Margate: He had had considerable experience of Parasitic mange in his district, propagated doubtless by the various military units that had from time to time been stationed in the vicinity, and amongst which, unfortunately, the disease had been very rife.

There was an important factor which veterinary inspectors should continually bear in mind: that was

the responsibility of clearing a horse free from infection that had previously been declared, after a careful microscopical examination, as a positive case of Parasitic mange. Even if one took scrapings of the skin after treatment, he thought that it was generally acknowledged that such proceedings were futile, owing to the dressings that had been applied. It therefore behoved them to err on the right side, and as far as possible not to release the animal until they were satisfied that the disease had ceased to exist.

Amongst the various remedial agents, most of which he had tried, none gave better results that horse fats, boiled several times and clarified, and mixed with sulphur, adding boric acid as a preservative.

Chloride of lime as a disinfectant was as a rule used for cleansing mangers, partitions, stall posts, etc., but of itself was ineffective. It had been experimentally proved that after a considerable period of time the acari had been found alive in crevices in the woodwork after the lime had been removed with a penknife. In his opinion the painter's blow-lamp was far and away most effectual.

As regards the transmissibility of the disease to man there was no possibility of doubt. He had seen the arms and chest of a groom covered with red spots attended by intense irritation, and on taking scrapings of the man's skin found that he was the subject of mixed infection—sarcoptic and psoroptic.

Mr. THOMAS RUSSELL JARVIE, M.R.C.V.S., Gateshead, complimented Mr. Gofton on his able and extensive paper, and also Mr. Wooldridge on the able way in which he opened the discussion. Both had put great emphasis on the necessity for the veterinary inspector to see that the remedy selected for the cure of mange should be properly applied. He quite agreed on that point, but wondered how it could be done by the part-time veterinary inspector under the present conditions. Mr. Jarvie stated that the working of the Parasitic Mange Order in the County Borough of Gateshead is done by the Sanitary Inspector; and in the County Council area of Durham, by the police. The veterinary inspector is only employed to diagnose the disease and sign the necessary forms of detention. The City Inspectors look after the treatment during the animals' detention, and only call the veterinary inspector in when they think the animal is cured, so that they can have the necessary forms signed to revoke the detention order.

Mr. W. JACKSON YOUNG, F.R.C.V.S., Board of Agriculture and Fisheries, briefly explained orders pertaining to parasitic mange, and in cases when the provisions of the order as to treatment were not properly carried out by owners, he advocated the revocation of the license granted enabling the horse to leave the place of detention.

A vigorous educational campaign is necessary before mange would be eradicated. For to disinfect adequately a good knowledge of the habits of the parasites was necessary.

Mr. W. H. BROOKE, M.R.C.V.S, Handsworth, Birmingham, drew attention to the not infrequent recurrence of Psoroptic mange in animals previously affected, occasionally several times. Mr. Male, of Reading, spoke of having found parasites embedded in epithelial crusts under the tail. This fact is confirmed by Mr. Berry's (B.O.A.) statement of having found this condition in a sheep which, year after year, was attacked by scab and recovered without treatment. The acarus which Mr. Berry found was, he said, a very large female, and explained satisfactorily the reason of the repeated recurrence of scab in the animal.

Mr. A. DOUGLAS, County Veterinary Inspector, Ayr, pointed out that while his experience in France showed that Sarcoptic mange was by far the more common variety among army horses, his recent outbreaks at home had been almost entirely of the psoroptic variety. As to the liability of the disease to recur, he quoted a case where Army stables, which had been occupied by mange cases, had been thoroughly disinfected and left unoccupied for five or six months, and when the stables were occupied again, mange very soon broke out, though no other origin of infection but the stables could be found.

He doubted that man was susceptible to the disease, and mentioned the extreme rarity of the disease among the men in a mange hospital in France.

REPLY.

Mr. A. GOFTON said a note had been handed to him asking the best method of disinfecting stables. After burning litter, etc., and scouring the fittings, there was nothing to equal the blow-lamp for efficiency. Recorded observations showed that eggs might hatch out up to four weeks after being deposited, but rarely, if ever, after that, and whilst he thought six weeks left a margin of safety, he did not believe in trusting to natural processes for disinfection.

As to the case referred to by Mr. Douglas, in which horses developed mange on being housed in a stable vacated six months previously by infected animals, he could not accept the view that infection was attributable to the previous occupants. He would like to know something of the history of the horses belonging to the unit before they were housed in these stables.

He did not agree that demodectic mange occurred in the horse in the so-called squamous form. Lesions of this type did occur in which the parasites could be easily demonstrated, but he was of opinion their presence was purely accidental, and not responsible for the development of the lesions. The parasites were found more frequently on the withers and other parts of the body, and remained there for long periods without any detectable lesions. Prof. Wooldridge had not given any observed facts in support of the statement that the Psoropt might lay nearly 100 eggs. He very much doubted it, and could not help asking whether the statement was merely an assumption, or was based on evidence.

Fatal cases of poisoning from the use of arsenical dips had undoubtedly occurred, and when the strength had been reduced to the point of safety against poisoning, the dips lost their efficiency for treatment. That at least was his experience, and whilst there was always the possibility of animals swallowing some of the solution on plunging into the bath, he thought skin absorption was a contributing factor. He had seen poisoning follow the application by hand of the arsenical solution to the skin. The cases occurred under conditions which excluded the possibility of contamination of the food.

NATIONAL V.M.A.

POSTPONEMENT OF MEETING.

After considerable hesitation, it was decided on Sunday, with much regret, to postpone the meeting advertised for Wednesday 8th inst, in consequence of the uncertainty, and in some cases impossibility, of many of the members being able to be present, owing to the dislocation of traffic caused by the Railwaymen's strike.

The date for holding the postponed meeting will be duly announced when arrangements have been made.

O. C. BRADLEY, *President.*
J. W. BRITTLEBANK, Lt.-Col. *Hon. Sec.*
G. H. WOOLDRIDGE, *Acting Sec.*

NATIONAL VETERINARY MEDICAL ASSOCIATION

MIDLAND COUNTIES DIVISION.

RIG CASTRATION.

By Prof. J. F. O'CONNOR, Royal Veterinary College of Ireland, Dublin.

(*Concluded from p. 152, Oct. 4.*)

After treatment. When the operation is finished let the patient be on the affected side, to bring pressure on the wound between the thigh and abdominal wall and prevent it gaping. Put the animal in a hygenic loose box. Splash an antiseptic lotion on the wound once or twice daily.

Remove the sutures and plug (if any), as indicated. When a fairly large orifice has been made into the abdominal cavity do not exercise the horse for about ten days after the operation, for fear of causing descent of the bowel. Any swelling which forms for want of exercise is of no consequence, but is rather an advantage on account of its tending to close the abdominal wounds. Some operators put the patient into a stall and have the hind quarters raised by means of a platform made of turf or planks and straw, the object being to keep the viscera away from the wound. In a double rig, operate on both sides on the same occasion. If the whole hand has been inserted on one side, the opposite testicle may be removed through the same opening.

Results. When the operation is done in a healthy subject with strict cleanliness, with ordinary aseptic and antiseptic precautions, without undue exposure of the peritoneum or very prolonged manipulations within the abdomen the result is almost invariably good, the animal suffering no ill effects and is ready for discharge within fourteen days after the operation. The scrotal swelling following rig castration is generally less than that following ordinary castration.

Complications. The complications to be feared are

1 *Prolapse of the intestine* immediately or within a few days, or rarely, a couple of weeks after the operation. If attended to in time before the bowel is contaminated or extensively protruded recovery may ensue, otherwise a fatal peritonitis is sure to supervene.

It rarely occurs when the canal has been tamponed.

2 *Peritonitis* due to entrance of infection into the abdominal cavity during or subsequent to the operation. There is no doubt that some subjects are more susceptible to infection than others. Death usually occurs within a week or ten days, but rare cases linger for weeks and then succumb.

3 *Internal Haemorrhage.* Not a common cause of death, but cases of it have been reported.

4 Ordinary wound complications.

Fatality. It is difficult to state this definitely, but speaking generally with regard to careful operation the mortality has been put at about 5%. There are exceptional operators who claim not to have had a single death. Judging from the attitude of some insurance companies, who refuse to insure rigs because they have been so hard hit by deaths, there must be a considerable number of fatalities on the whole.

Out of about 90 cases I had 3 deaths :—

1 From internal haemorrhage ; the patient succumbed 55 hours after the operation. Post-mortem examination revealed the abdominal cavity full of blood, but failed to disclose the source of the haemorrhage.

2 From peritonitis, which I ascribe to prolonged efforts to draw out the testicle by traction on the cord with the fingers, instead of inserting the whole hand sooner and extracting the testicle at once—which I eventually did. The horse was a rather phlegmatic subject, and was operated on in January, two days after a long train journey. He was cast on an old straw bed within doors, with numerous spectators who of course raised septic dust, which may have done the harm.

3. The cause of death was not ascertained. I took the usual precautions except that I entrusted the instruments to a layman to sterilise in his house, and cast the animal on old short straw in an antiquated shed on a hot day in mid-summer when the flies were very busy.

The colt, a two-year old thoroughbred, was longer than usual in rising after the operation. He was in poor condition, was said to have been delicate since he was a foal. He was reported as doing well until the seventh day, when he suddenly got bad with colicky pains and died. The local veterinary surgeon was away from home, and the patient received no skilled attention. No post-mortem was made.

OPERATION THROUGH THE FLANK.

Cast the horse on the opposite side with hobbles and administer chloroform.

Taking the usual precautions, make a vertical (horse standing) incision about 5in. long through the skin and subcutaneous tissues at about the level of the curl of the hair, the lower extremity of the incision being just above the fold of skin in front of the stifle. Separate the fibres of the internal abdominal oblique muscle, and perforate the peritoneum with the fingers. Introduce the hand into the abdominal cavity and, taking the vas deferens above the bladder as a guide, secure the testicle, withdraw it and remove it. Sutures may be inserted in the muscular wound, but they are not necessary, as the fibres come together of their own accord, and moreover sutures have the disadvantage that if they become contaminated they will give rise to suppuration and necessitate opening up the skin wound, which may have closed over them, to remove them.

Suture the skin wound, leaving a dependent orifice for drainage. Winter, of Limerick, advises the insertion of a seton at the lower commissure of the wound in the skin to prevent pocketing of discharge there.

Results. The results so far as I can judge are as good as those of the other methods of removing abdominal testicles by inserting the whole hand in the abdomen.

Advantages. 1. The operation is very easily performed, the operator not being hampered for want of room when the hand is in the abdomen.

2. There is practically no danger of prolapse of the bowel.

Disadvantages. 1. The necessity of inserting the whole hand into the abdomen, which predisposes more to peritonitis than merely inserting the fingers.

2. The necessity of opening the abdominal cavity even in the case of an inguinal rig thereby subjecting the patient to an unnecessary risk in this case.

3. The drainage perhaps is not so good as that from the inguinal region.

4. It is looked upon as an obsolete method by modern surgeons and can only be recommended for those who are not sufficiently skilled or confident to operate through the inguinal region.

CASES WITH FEATURES OF SPECIAL INTEREST.

Case I. Descent of bowel. Subject a five-year-old, bay thoroughbred, absolutely unmanageable, had undergone two unsuccessful attempts at castration. Testicle readily found on inserting the whole hand in the abdomen. My first case. Merely sutured the scrotal skin ; when the horse was entering his box a loop of bowel descended into the scrotum. Re-sterilised the instruments and recast the horse. During casting a knuckle of bowel protruded between the sutures. Cut the sutures, returned the bowel and plugged the canal with cotton wool. Plug removed seven days afterwards. Recovery.

Case II. Descent of bowel alongside plug. Subject a five-years old race horse. Operated in a downpour of rain. Introduced the whole hand to find the testicle, inserted a small plug in the canal. After entering the box colicky pains appeared, swelling in scrotum due to intestine escaping from the abdomen. Proceeded as in the first case. Plug removed 14th day. Recovery.

Case III. Double incomplete abdominal Rig. Subject four-years old three-quarter bred. Found epididymis in the canal on each side, but traction thereon failed to bring out the testicle. Introduced the fingers into the abdominal cavity and found the testicle at once. Plugged each canal. Removed plug on third day. Recovery.

Case IV. Double complete abdominal Rig. Subject two-years old cob. Operated on wet ground on a cold, wet evening. Found the testicle on each side with the fingers, plugged each canal. Removed plug on third day. Recovery uneventful.

Case V. Profuse hæmorrhage during operation and severe pain afterwards. Subject four-years old hunter. Operated on same occasion as No. IV. There was profuse venous hæmorrhage from the wound after puncturing the abdominal wall. Found the testicle easily in the abdomen with the fingers. Plugged the canal very tightly with gauze to arrest the hæmorrhage. Two hours after entering his box the horse seemed greatly distressed, blowing hard, at the rate of 60 per minute, with an anxious expression and refusing to stir. I thought of internal hæmorrhage, but the pulse was fairly strong and the extremities were not cold; then suspected strangulation of the intestine in the abdominal opening, but rectal examination showed that this had not occurred; and finally thought it might be a chill from casting on the cold wet ground. I believe however, that the symptoms were due to pain caused by the tight plug in the canal. Applied rug and bandages and gave a rectal injection of normal saline. In the course of a few hours ceased to blow and took his mash and did well afterwards. The plug was removed on the third day. The limb of the affected side swelled a good deal, and the animal was very stiff for a few days.

Case VI. Intestine in the Inguinal canal. Subject three-years old, grey hunter. Found a process of peritoneum in the inguinal canal containing what I thought was the testicle, but on rupturing the membrane I found that it was a loop of bowel. I pushed it back and found the testicle with the fingers and removed it. Plugged the canal. Recovery.

Case VII. Severe septic infection of normal Castration Wound. Subject three-years old, chestnut hunter, which had been housed in a dirty cowshed, and whose long coat was matted all over with cow-dung. A fruitless attempt was made to clean him. I found the retained testicle in the abdomen with the fingers.

Two or three days after the operation severe inflammation supervened in the normal castration wound, and the temperature rose to 105°F yet the pulse remained strong and never exceeded 54-60. The respirations were accelerated owing to the pain in the wound. The conjunctiva was injected and dirty. The horse continued to feed. The temperature remained between 103·5 and 105° for a week. The cord on the inflamed side became very swollen and painful. On the tenth day a piece of foetid necrotic tissue fell from this wound. The horse steadily improved afterwards, and I considered it fortunate that infection did not reach the abdominal cavity through the opening therein. The wounds were treated twice daily with antiseptic lotion, and the inflammatory swelling was well fomented. Laxative medicine and stimulating balls were administered.

Case IX. Gelding behaving like a rig. Subject a 9-year-old artillery horse, in the habit of erecting the penis and ejecting what appeared to be semen. In poor condition. The veterinary officer in charge was convinced the horse was a rig although he was not vicious, or excited in the presence of other horses. On exploring the inguinal canals I found a cord in each which should have been sufficient evidence that both testicles had been removed, but as it was insisted that there must be a hidden testicle, introduced my hand into the abdomen (on one side only) and traced each cord from the bladder to the internal inguinal ring, and satisfied myself further that there was no testicle in the abdomen. I prolonged the search for a good while, and the patient was in a fairly collapsed state after it, with an almost imperceptible pulse of 84, but revived with a rectal injection of normal saline and a hypodermic injection of atropine. The horse recovered form the operation but renewed his habit of masturbation after returning home.

Case X. Leaving the Testicle in the abdomen after severing the Spermatic artery and Vas deferens. Subject a very big two-year-old grey cart colt. I operated in a field on a cold wet evening in November. I secured the epididymis in the abdomen with the fingers, but the testicle was too large to come through the opening. I resolved not to make the opening big enough to introduce the hand to get hold of the testicle, but succeeded in bringing out the convoluted spermatic artery. I placed a loop of the artery and the vas deferens, including the epididymis, in the emasculator and removed them, leaving the testicle in the abdomen.

The operation had very little effect on the horse which made an excellent recovery.

Case XI. Cryptorchidism and Scrotal Hernia combined. Subject a two-year-old cart colt. One testicle was removed at one year old, at two years old a swelling was noticed on the other side, which the owner thought was a testicle. On examination this was found to be a scrotal enterocele.

As it was an extremely wet day I cast the horse in a hayshed on an oat straw bed. On opening the hernial sac I found I could easily put my whole hand through it into the abdomen. I found the tail of the epididymis at once, and traction on it failed to bring out the testicle. On manual examination of the latter I found that it was of enormous size, hard as bone, nodular, and cystic in parts. I punctured the cysts with a long trocar and canula and allowed their yellow contents to escape outside after turning the horse on its side. Some of the liquid however escaped alongside the canula into the abdomen. Still the testicle was too large to pass through the neck of the hernial sac. I incised the latter after failing to dilate it with a long forceps, and in again trying to extract the gland the cord ruptured at the level of the testicle, leaving a depression on its surface where I got a grip with my fingers. In another effort to get the organ out a piece came away in my hand, and proved to be a well-developed molar tooth. I again inserted the hand and succeeded in getting out the organ, which I found to be a mass of several fully developed molar teeth. I could have removed a portion of the spermatic artery and cord, and left the testicle in the abdomen, as in case X, but I was anxious to see the curious gland. I applied the tunica vaginalis, that is the peritoneal sac of the hernia, round the cord, artery, and vas deferens, after cutting with the emasculator and included all in a metal clam. The clam was removed on the 9th day after the operation, and the patient made an uneventful recovery. Another remarkable feature of the case was the distance between the tail of the epididymis and the testicle, which measures 15 inches.

Previous to reading the paper, Prof. O'Connor gave a surgical demonstration on two cases.

DISCUSSION.

The PRESIDENT expressed his very great regret that owing to the lateness of the hour, a proper discussion was not possible to-day. He thought the most they could do would be to ask any question of the essayist that might occur to members. He was sure they had all witnessed the operations with great pleasure and profit and all had listened with interest to the description of the various phases of rig castration.

Mr. RENFREW asked whether rigs were as common as they were in the habit of supposing. He had castrated a good many colts in his time, 5,000 probably, but he had not come across more than twenty real rigs. He had some times been obliged to make an opening pretty high up, but he had met very few animals with the testicle in the abdomen.

Mr. OVER said he never undertook the castration of rigs himself. He generally entrusted such work to some expert member of the profession, who specialised in it. The majority of his cases had been attended with satisfactory results, and he only remembered two deaths, one from tetanus and the other through the bowel coming down. He would like to know whether Prof. O'Connor had much difficulty in the matter of chloroform.

Mr. HUNTING, referring to a particular case mentioned by the essayist, suggested that instead of making a larger opening in the abdominal wall, to bring the testicle out, it might be better to cut the cord and allow the testicle to slip back into the abdominal cavity. He thought the peritoneal fluid was capable of absorbing the testicle.

The HON. SEC. said he would like to thank Prof. O'Connor for coming to Birmingham. The Professor having promised to come, he gave him no peace till he did so. Prof. Dewar, of Edinburgh, in apologising for his absence to-day, said he should have been delighted to be present, because Prof. O'Connor was an old pupil of his and a very excellent operator. He (the Hon. Sec.) was rather disappointed that both the animals just operated on were not rigs, but in one case there was no history, and they had to take their chance. They would have noticed how specialists went about their work, and he was bound to say that Prof. O'Connor's system seemed to be simpler than anything he had seen before. He was sure all present would carry away with them pleasant recollections of what they had seen. He moved that the best thanks of the Association be tendered to Prof. O'Connor for his splendid paper.

The PRESIDENT, in seconding, said most of them had heard of Prof. O'Connor, and he had fully maintained his reputation as a first-class operator. The vote of thanks having been accorded,

Prof. O'CONNOR replied. He said he very much appreciated the friendly way in which he had been received and the kind attention they had paid to his paper. He could not say what percentage of colts were rigs or how many had the testicle in the abdomen, but most of his own operations were on abdominal rigs. Mr. Over's experience only showed the necessity of plugging the canal. He had met veterinary surgeons who held the view that it was not necessary, but he thought differently. With regard to the amount of chloroform required, it was the same as any other operation. He commenced with a couple of ounces and gave more if necessary. It might take five, six, seven or even ten ounces, but as a rule, from two to four ounces were sufficient. Mr. Hunting made a very pertinent remark as to why he did not leave the testicle in the abdomen. He agreed that it would have been the best thing to do, but in this case he was consumed with curiosity to see what the testicle was like. He would have liked to see Prof. Dewar present. He acted as his assistant for a year after he qualified, and it was from Prof. Dewar that he learnt to tie a rig up.

This concluded the proceedings, and those present afterwards adjourned to the Grand Hotel, where tea was partaken of.

H. J. DAWES, F.R.C.V.S., Hon. Sec.

UNQUALIFIED ASSISTANTS.

To the Editor of "The Veterinary Record."

Sir,—I desire to see the exit of the unqualified assistant from our profession, but I do not pretend to know sufficient about the the subject to be able to conscientiously prescribe for him a just and expeditious way of departure. I do not speak without some experience however.

During the time I was serving my pupilage with a busy country practitioner, I came into personal contact with no less than five unqualified assistants, who were employed one after the other by my august principal, a worthy F.R.C.V.S.

Judging from the fact that this veterinary surgeon employed four qualified assistants as well whilst I was with him; making nine in all, I should say he was not particularly pleased with either sort. He and I often talked about these fellows. I thought it was anything but hopeful for the future of such as myself that these men should be occupying berths which ought rightly to be filled by qualified assistants, and that I might have to compete with such like if I had the luck to qualify and obtain any diploma. Obviously the thing was outrageous and absurd on the face of it.

Was I prepared, I thought, to sacrifice five of the best years of my life, and to cost my father £1000 before I could earn my own living, and then find myself accepting £2 a week to live out—for that is what it really amounted to before the war, ten years ago. (It is proportionally the same to-day, if you leave the unqualified man alone.) Am I going to do that, I said to myself, work for five years, earn nothing, cost £1000, and then compete with a man who has no qualification for the job?

Not me, if I can avoid it, said I. So I began to study the matter over. And I was amazed to find that members of the Council, leading practitioners, and a past president of the R.C.V.S., whom I knew personally, had at one time employed or were then employing unqualified assistants.

We students did what we could, but it was'nt very effective, and I rejoice to think that our Council is now proposing to deal with the matter; and I do hope it will soon be "conduct disgraceful in a professional sense" to employ an unqualified assistant.

The answer I got from my principal was invariably the same, "I employ these men" he said "because I find the qualified men are so unpractical and inexperienced." I quite admit that there was much truth in that, but if my observations were of any value, I can truthfully state that the unqualified assistants I met there, were illiterate, uncouth, and knew very little about veterinary work

The principal reason why they *were* employed was simply this. They were cheap. In addition to this happy qualification they would do the rough work, clean out the dog kennels, do a bit of grooming, or anything that was necessary. When the qualified men were expected to do such work they naturally resented, so they were not suitable assistants, and were duly discharged.

It is not a bit of use anybody telling me this is not true. I know it. One unqualified man was elderly, and had been getting his living thus for some years. Another was a young man whose father was a veterinary surgeon. This fellow would have made a very good vet. if he had been educated. He got 30/- a week and lived out.

I would vote for any reasonable proposal whereby all the crowd could be got rid of. In the words of Lord Fisher I would "sack the lot."

How can we get the students to our colleges when the bright prospect of the unqualified man still faces them?—Yours faithfully,

Towcester. W. E. BLACKWELL.

Dear Sir,—To the profession in Scotland it is positively surprising that a bye-law proposing to abolish unqualified assistants should be opposed.

If, indeed, such bye-law stood in need of vindication the professional position in Scotland in relation to unqualified assistants might well be regarded as affording a final answer to all objections. In Scotland, ex-grooms and other empirics never have obtained any foot-hold in the profession. Indeed it may well be doubted whether a single instance of to-day is known of professional responsibility being shared in general practice with unqualified assistants of this kind.

Against the abolition of unqualified assistants various objections, all of them irrelevant, have been urged in your columns. Of these, one of the latest proceeds on the assumption of a certain disfavour, not, indeed, so much on the part of professional men themselves as on the part of some of their clients, who curiously enough—so it would appear—have learned to appreciate the business wit and the practical knowledge of the "unqualified."

A very different estimate of unqualified assistance obtains in Scotland, however, so far from appreciating ex-grooms and other empirics as veterinary assistants, stock breeders and agriculturists generally will simply not tolerate their presence as such. The professional man therefore who would deign to foist any assistance of this kind upon his *clientèle* would very soon find a Pandora's box for himself, also for his unqualified assistant.

The general position in Scotland is far enough from what it should be: yet in respect of the problem of unqualified assistance a precedent is, and has been for long enough established, which itself is an unanswerable argument in favour of the proposed bye-law.—Yours faithfully,

"QUALIFIED ASSISTANT."

PUPILAGE.

Dear Sir,—May I be allowed space in which to air my views on subjects which are, at present, attracting attention? I may say, at the outset, that I have been a member of the profession for 13 years, and have now determined to obtain a livelihood in a different sphere.

During the discussion on Mr. Faithfull's paper, the report of which I read in your columns, much was said about the advantages of different kinds of pupilage.

I am one of those who are convinced that a pupilage is practically necessary if a really good man is to be turned out. There is, however, the financial point of view to be considered. Is a boy, under present conditions, justified in expecting a return on the money which will be expended on even the present four years' course without adding to it the expense of a further years' training? It is, in the future, going to cost a very considerable sum of money for a boy to obtain his diploma, and I, for one, cannot see an adequate return for such expenditure. If a boy leaves school at 18 years of age, serves a pupilage, and then four years at college, he will find himself 23 years of age when he receives his diploma. He will also find himself, according to some views, in need of two to three years' experience before he is of much use in practice.

Even though he be one of the really good ones, he finds himself in a position to earn, as an assistant, the princely sum of £6 to £8 per week. (I take these figures from the discussion already mentioned but I notice that one gentleman gave "hopes" of a less amount being sufficient in a few years.) That is, he is able to earn the same amount as an able-bodied collier of 20 years of age, who works, I believe, about 45 hours per week.

And what does the assistant work? Let him consider that, with him, there are no settled hours. He is always supposed to be waiting, hat in hand, to rush off to a case. Even when waiting he is often either looking or keeping up the stock of powders, etc.

Night or day, Sunday or weekday, it matters not. His friends have their sport and recreation on Saturday afternoons, their leisure on Sundays and in the evenings. There are times when the veterinary surgeon has leisure, but he must occupy it in such a manner that he is available at short notice.

For all this the assistant is paid the sum mentioned. If it be worked out at so much per hour I think it will be found that he is one of the poorest paid men of his class in England.

I think, therefore, that the only justification for a pupilage, at the present time, would be that the boy might have a chance of seeing what sort of a life he is likely to lead, and thus give him a chance to draw back before it is too late.

Do I write pessimistically? Take my own case!

I determined to thoroughly equip myself for a veterinary life and was, for three years, a farm pupil. Surely that was long enough to suit even the strongest believer in such training! I then entered college and went straight through, managing to pick up, *en route*, a few medals and honours. After qualifying I took a post graduate course and obtained another diploma.

I felt then that I was really trained, especially as I had spent every moment of my vacations as pupil in a large practice.

I found that, after eight years' training, my services were valued at £150 per year and, at the end of a further four years, I had reached the truly magnificent sum of £3 5s. per week.

If the people for whom I worked were truthful, I was, to put it mildly, above the average in professional knowledge, ability, and tact. If I was not, they had no right to speak as highly of me, in testimonials, as they did. During those years I worked harder than I hope I shall ever be called upon to do again, and I determined to say good-bye to it all.

I used to read about the "profession" and often wished, as I drove home after performing such scientific operations as removing a particularly nasty afterbirth, or "cutting" a litter of pigs, that I was just a working man, and not a professional one at all.

Should our graduate wish to practise for himself, he will be extremely fortunate if he can say, with family expenses, etc., that he is putting by sufficient for a comfortable old age. I say nothing of the risks of the work, but I do say that a man who is well on in years cannot stand the life of the average practitioner.

With the all round increase in mechanical traction practice will tend more and more to be limited to country work, which is the hardest and, often, the poorest paid.

Should our graduate not wish to practise, there are open to him the Army, colonies, or civil posts.

The Army has now realised that the labourer is worthy of his hire. We have recently had letters in *The Record* telling us that colonial posts are not what they appear to be, and the civil appointments, whatever they may be in the future, have certainly, in the past, not been "plums."

Apart from all this, the profession is one which appears to be very limited in *esprit de corps*. On all sides one hears complaints of the lack of interest of the members. It is undoubtedly true that many men cannot get away to meetings of the various societies, but do they endeavour to make up for that by endeavouring to pull together? Take one sentence from the letter of "M.R.C.V.S." in your issue of Sept. 27th. "No veterinary surgeon of any standing would allow other veterinary surgeons to be prowling about his practice—there are ways and means to stop that." That is a fine spirit for one professional man to show towards his brother, is'nt it? It is only one case, quoted because it is recent, and needs no elaboration from me except to say that I regret the use of the three words "of any standing."

Take also the outcry which is being made against the abolition of unqualified assistants. Can any man who really has the welfare of his profession at heart honestly say that it is a good thing to employ an unqualified man? There have always been loud complaints about the unqualified men against whom practitioners have to compete, and complaints that the Council did not sufficiently often prosecute. Yet we have members openly training, and allowing to have good experience, men who may afterwards fill such posts.

In his letter, Mr. Trevor Spencer says, "as a profession we are not in the highest favour just now with certain sections" because we may have had something to do with some clauses which they did not like in a certain Act. Is the profession to stop to consider what people will think before it takes a stand on any subject which is of interest to it or its work?

Mr. Spencer also says that the discharged unqualified men may form a sort of trade union with the object of holding over the profession a horrible threat, namely, of showing to the public that veterinary brains are divided into the same two classes as the brains of every other body or community in the civilised world.

Things have come to a pretty pass if statements like that are to be used as genuine argument against a policy.

Surely it is time that a stand was taken! Every body of men in England is engaged to-day in putting its house into what it considers to be a state of order. Let the veterinary profession do the same, and endeavour to offer a sound and attractive future to the youth of the nation.

Either let the veterinary surgeon take his stand as a professional man, doing scientific work and demand recognition and fees accordingly, or let him drop the professional part altogether and put a shop window in one part of his premises and display for sale "cleansing draughts," "blue drinks," and "pink powders."

Then the veterinary aspirant will know exactly where he is, and, maybe, be spared such a regret as is felt by him who signs himself

7th October. "PESSIMIST."

The late Mr. A. W. Shilston.

Mr. Shilston died at Muktesar, India, on July 6th. He had been carrying out investigations on Glanders, and by some means became infected.

DISEASES OF ANIMALS ACTS 1894 TO 1914, SUMMARY OF RETURNS.

Period.		Rabies. Cases Confrmd Dogs	Rabies. Cases Confrmd Other Anmls	Anthrax Out-breaks (a)	Anthrax Animals.	Foot-and-Mouth Disease. Out-breaks (a)	Foot-and-Mouth Disease. Animals.	Glanders.† Out-breaks (b)	Glanders.† Animals.	Parasitic Mange. Out-breaks (b)	Parasitic Mange. Animals.	Sheep Scab. (b)	Swine Fever. Out-breaks (a)	Swine Fever. Slaughtered. *
GT. BRITAIN. Week ended Oct. 4				2	2			2	2	37	57	10	44	21
Corresponding week in	1918	8		3	3	1	14			33	46	1	29	9
	1917			1	2			1	6	12	19	2	25	6
	1916			8	10			2	4	11	41	2	57	37
Total for 40 weeks, 1919		143	3	153	200	28	1593	22	52	4234	8524	235	1751	814
Corresponding period in	1918	15	1	192	222	2	22	25	70	3602	6775	261	1094	437
	1917			349	398			22	41	1969	3758	406	1818	788
	1916			408	481	1	73	43	105	1769	3991	197	8593	8805

(a) Confirmed. (b) Reported by Local Authorities. † Counties affected, animals attacked :— Hertford 1, Stafford 1
Board of Agriculture and Fisheries, Oct. 7, 1919 Excluding outbreaks in army horses.

IRELAND. Week ended Sept. 27	...	...	...	...	...	...	Outbreaks ...	3	...	8
Corresponding Week in 1919 ...	...	...	...	...	...	...	...	9	1	...
1917 ...	...	...	...	...	...	...	...	3	...	...
1916 ...	...	...	...	...	...	...	...	8	11	49
Total for 39 weeks, 1919	...	...	...	...	1	1	126	186	29	92
Corresponding period in 1918 ...	2	2	...	...	...	...	92	222	22	72
1917 ...	3	5	...	...	1	1	40	292	185	1082
1916 ...	3	7	...	...	...	...	54	317	246	1481

Department of Agriculture and Technical Instruction for Ireland, (Veterinary Branch), Dublin, Sept. 29, 1919
NOTE.—The figures for the Current Year are approximate only. * As Diseased or Exposed to Infection